

Notice of Allowability

Application No.

09/586,680

Examiner

Brandon Hoffman

Applicant(s)

DOWNING, DANIEL

Art Unit

2136

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to Amendment received on June 22, 2004.
2. ☒ The allowed claim(s) is/are 1-16 and 19-21.
3. ☒ The drawings filed on 01 June 2000 are accepted by the Examiner.
4. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) ☐ All b) ☐ Some* c) ☐ None of the:
 1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.


Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

5. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
 6. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
 - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
 - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
 - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
7. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☒ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☐ Information Disclosure Statements (PTO-1449 or PTO/SB/08), Paper No./Mail Date _____
4. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material
5. ☐ Notice of Informal Patent Application (PTO-152)
6. ☐ Interview Summary (PTO-413), Paper No./Mail Date _____
7. ☒ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other _____


AYAZ SHEIKH
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2100

DETAILED ACTION

Allowable Subject Matter

1. Claims 1-16 and 19-21 are allowed.
2. The following is an examiner's statement of reasons for allowance: the feature of "the inverted bit has an incorrect or invalid value according to the predetermined ECMA standard" during recording and "after the inversion the at least one frame has a correct or valid value according to the predetermined ECMA standard" during reading narrowed the claims to overcome the prior art of record.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

3. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it **MUST** be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with Norman Klivans, registration number 33,003, on September 28, 2004.

Cancel claim 18.

Cancel claim 22.

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Newly amended claim 1.

A method for reading and decoding data from an optical medium recorded according to a proprietary format based on a predetermined ECMA (European Computer Manufacturer's Association) standard, comprising:

reading channel bits from the optical medium;

removing sync codes from the channel bits to derive a plurality of ESM (eight-to-sixteen modulation)-encoded words;

decoding the ESM-encoded words to generate a plurality of recording frames;

rearranging the recording frames to generate an ECC (Error Correcting/Correction Code) block;

removing parity bytes from the ECC block to generate a plurality of scrambled data frames;

descrambling the scrambled data frames to generate a plurality of encoded data frames;

inverting at least one selected bit at a predetermined location of each encoded data frame to generate a plurality of data frames, wherein only after inverting each data frame including the inverted bit has a correct or valid value according to the predetermined ECMA standard; and

extracting main data from the plurality of data frames.

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Newly amended claim 8.

The method of claim 1, wherein reading the channel bits from the optical medium comprises:

Deriving NRZI-encoded (Non-Return to Zero Inverted) pulses from the optical medium; and

Decoding the NRZI-encoded pulses to generate the channel bits.

Newly amended claim 9.

A method for recording data on an optical medium according to a proprietary format based on a predetermined ECMA (European Computer Manufacturer's Association) standard, comprising:

receiving main data;

determining a plurality of data frame values in response to the main data;

inverting at least one selected bit in a predetermined location at least one of the data frame values to generate a plurality of encoded data frames;

scrambling the encoded data frames;

generating ECC (Error Correcting/Correction Code) values in response to the scrambled data frames;

adding the ECC values to the scrambled data frames to generate an ECC block;

rearranging the ECC block to generate a plurality of recording frames;

encoding the recording frames by an eight-to-sixteen modulation to generate code words;

adding sync values to the code words to generate a plurality of physical sectors;
and

recording the physical sectors on the optical medium, wherein at least one of the recorded physical sectors including the inverted bit has an incorrect or invalid value according to the predetermined ECMA standard.

Newly amended claim 10.

The method of claim 9, further comprising NRZI (Non-Return to Zero Inverted) encoding the physical sectors prior to recording the physical sectors on the optical medium.

Newly amended claim 19

A system for recording data on an optical medium according to a proprietary format based on a predetermined ECMA (European Computer Manufacturer's Association) standard, comprising:

- an input terminal for receiving main data;
- a framer having an input terminal coupled to the input terminal;
- a data frame encoding system having an input terminal coupled to an output terminal of the data framer and adapted to invert at least one selected bit at a predetermined location in at least one of the data frames received from the framer;
- a scrambler having an input terminal coupled to an output terminal of the encoding system;

an error correction code generator having an input terminal coupled to an output terminal of the scrambler;

an error correction code encoding system having an input terminal coupled to an output terminal of the error correction code generator;

a recording frame generator having an input terminal coupled to an output terminal of the error correction code encoding system;

an ESM (eight-to-sixteen modulation) encoder having its input terminal coupled to an output terminal of the recording frame generator;

a physical sector generator having an input terminal coupled to an output terminal of the ESM encoder; and

a write head coupled to an output terminal of the physical sector generator, thereby to record on the optical medium, wherein at least one of the recorded physical sectors including the inverted bit has an incorrect or invalid value according to the predetermined ECMA standard.

Newly amended claim 20.

A drive for reading and decoding data recorded according to a proprietary format based on a predetermined ECMA (European Computer Manufacturer's Association) standard from an optical medium, comprising:

a read head adapted to read data from the optical medium;

a physical sector reader coupled to the read head;

an ESM (eight-to-sixteen modulation) encoder coupled to an output terminal of the physical sector recorder;

a recording frame reader having an input terminal coupled to an output terminal of the ESM encoder;

a decoding system having an input terminal coupled to an output terminal of the recording frame reader and adapted to invert at least one selected bit at a predetermined location in at least one frame received from the recording frame reader, wherein only after the inversion the at least one frame has a correct or valid value according to the predetermined ECMA standard;

an error correction code reader having an input terminal coupled to an output terminal of the decoding system;

a descrambler having an input terminal coupled to an output terminal of the error correction code reader; and

a data frame decoder having an input terminal coupled to an output terminal of the descrambler.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Brandon Hoffman whose telephone number is 703-305-4662. However, my new number will be 571-272-3863 after our October 25 move. The examiner can normally be reached on M-F 8:30 - 5:00.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ayaz Sheikh can be reached on 703-305-9648. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Brandon Hoff

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